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TITLE: Magnetic disc for magnetic memory device - has protective coating bed layer of noble metal, fixed layer of mono:molecular film and lubricating protective coating

PATENT-ASSIGNEE: NEC CORP[NIDE]

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ABSTRACTED-PUB-NO: JP 09120525A

BASIC-ABSTRACT:

The magnetic disc comprises:

- (a) a protective coating bed layer consisting of a noble metal having a thickness of 0.1-100 nm and formed on the surface of a magnetic recording layer;
- (b) a fixed layer consisting of the monomolecular film of an acid organic compound having sulphur in a molecule and formed on the surface of the protective coating bed layer; and
- (c) a lubricating protective coating consisting of a basic organic compound containing fluorine and formed on the fixed layer.

Also claimed are:

- (i) the prodn. of the magnetic disc comprising:
 - (a) dipping the protective coating bed layer formed on the surface of the magnetic recording layer in the organic solvent soln. of the acid organic compound for constituting the fixed layer for a predetermined period, forming the fixed layer on the protective coating bed layer;
 - (b) cleaning the fixed layer in a pure organic solvent;
 - (c) dipping the fixed layer in the organic solvent soln. of the basic organic

compound for constituting the lubricating protective coating for a predetermined period, forming the lubricating protective coating on the fixed layer; and

(d) cleaning the lubricating protective coating in a pure organic solvent; (ii) the magnetic head comprising:

(a) a protective coating bed layer consisting of a noble metal having a thickness of 0.1-100 nm and formed on the surface of an air lubricating surface;

(b) a fixed layer consisting of the monomolecular film of an acid organic compound having sulphur in a molecule and formed on the surface of the protective coating bed layer; and

(c) a lubricating protective coating consisting of a basic organic compound having an alkyl gp. or polyether gp. in which hydrogen is substituted to fluorine and formed on the fixed layer;

(iii) the prodn. of the magnetic head comprising:

(a) dipping the protective coating bed layer formed on the surface of the air lubricating surface in the organic solvent soln. of the acid organic compound for constituting the fixed layer for a predetermined period, forming the fixed layer on the protective coating bed layer;

(b) cleaning the fixed layer in a pure organic solvent;

(c) dipping the fixed layer in the organic solvent soln. of the basic organic compound for constituting the lubricating protective coating for a predetermined period, forming the lubricating protective coating on the fixed layer; and

(d) cleaning the lubricating protective coating in a pure organic solvent; and

(iv) the magnetic memory device having the magnetic disc or the magnetic head, or the magnetic disc and the magnetic head.

USE - The methods produce the magnetic disc and the magnetic head suitable for high-density recording. The magnetic disc and the magnetic head are used in a magnetic memory device.

ADVANTAGE - The use of the lubricating protective coating for the magnetic memory device reduces the distance between a floating magnetic head and a magnetic recording layer by 25 nm compared with a combination of a conventional protective coating and a liq. lubricant with good lubrication durability retained. A magnetic disc device has dramatically enhanced durability.

CHOSEN-DRAWING: Dwg.0/1

TITLE-TERMS: MAGNETIC DISC MAGNETIC MEMORY DEVICE PROTECT COATING BED LAYER NOBLE METAL FIX LAYER MONOMOLECULAR FILM LUBRICATE PROTECT COATING

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(54)【発明の名称】 磁気ディスク及びその製造方法、磁気ヘッド及びその製造方法、磁気記憶装置

(57)【要約】

【課題】 磁気記憶装置に関し、高密度記録を達成するために、浮動磁気ヘッドと磁気ディスクの磁性記録層との距離を小さくすることができ、なおかつ十分な潤滑性能と耐久性を有する潤滑保護膜を提供する。

【解決手段】 磁気ディスクあるいは磁気ヘッド1の表面に貴金属からなる保護膜下地層2を成膜し、この保護膜下地層2の表面に、分子内に硫黄原子を持つ酸性有機分子3の単分子膜からなる固定層を形成し、さらにその上に水素がフッ素と置換したアルキル基またはポリエーテル基を持つ塩基性有機分子、または塩基性原子団上の水素原子がフッ素原子に置換された塩基性有機分子4の化合物の薄膜からなる潤滑保護膜を形成させることにより、高い潤滑性能と耐久性を持ち、かつ膜厚が3~4 nmと小さい潤滑保護膜が得られる。

